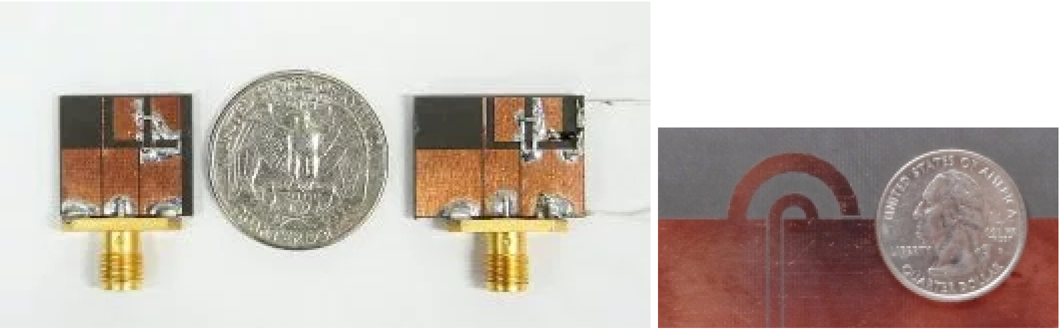
“No bird soars too high if he soars with his own wings.” — William Blake

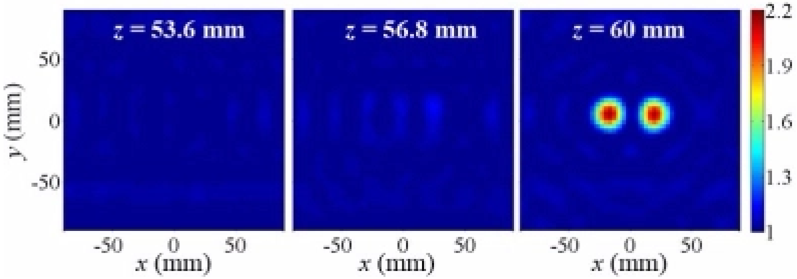
Advanced Antenna Laboratory (AAL)

RESEARCH AREA

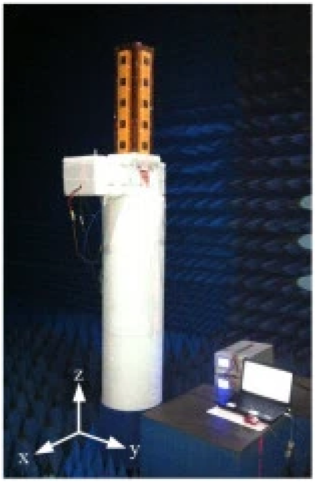
- *Metamaterials and composite right-/left-handed transmission lines*



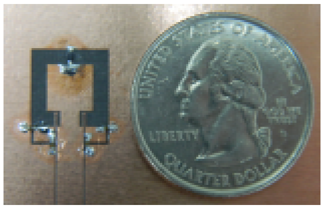
- *Microwave imaging*

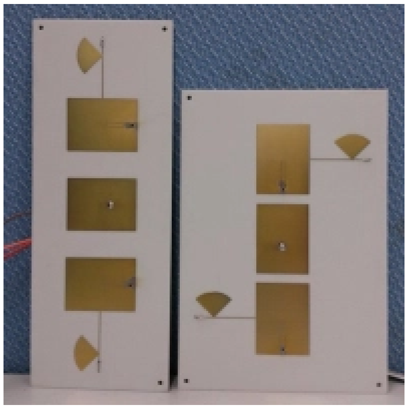


- *Phased arrays*

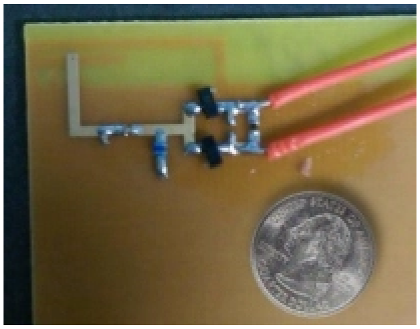


- *Reconfigurable antennas*





- *RF energy harvesting*



- *Self-structuring microwave devices (cooperation with Prof. Edward Rothwell of* MSU)

ADVISER: Shih-Yuan Chen (*陳士元*)

Professor & Associate Chairperson,

Department of Electrical Engineering & Graduate Institute of Communication Engineering, National Taiwan University (NTU), *Taiwan*

Office: Room 548, EE Building 2

Education

- *Ph.D. in Communication Engineering* (2005), NTU
- *MS in Communication Engineering* (2002), NTU
- *B.E. in Electrical Engineering* (2000), NTU

Honors & Awards

- *NTU Excellent Teaching Awards in 2009, 2010, 2012, 2013, 2014, and 2015.*
- *Ministry of Science and Technology Research Projects for Excellent Young Scholars in 2012, 2015, and 2017*
- *2013/2014 Top 10 Reviewers of IEEE Transactions on Antennas and Propagation*
- *2012 International Symposium on Antennas and Propagation Young Scientist Travel Grant*

Membership & Services

- *IEEE Senior member*
- *Counselor of IEEE Student Branch at NTU*
- *Member of Education Committee of IEEE AP Society*
- *Vice-Chair of IEEE AP-S Taipei Chapter*
- *Member of Commission B of URSI*
- *Associate Editor of IEEE Antennas and Wireless Propagation Letters (AWPL)*
- *Editorial Board Member for International Journal of Antennas and Propagation*
- *Secretariat of 2016 IEEE International Symposium on Radio-Frequency Integration Technology*
- *Finance Chair of 2013 Asia-Pacific Radio Science Conference*

MEMBERS

Current Ph.D. students

- Cheng-Hao Tsai (蔡政豪): *Three-Dimensional Microwave Holographic Imaging with Probe and Phase Compensations*
- Kai-Cheng Chi (紀凱程): *embedded antenna design*
- Deng-Yin Wang (王登胤): *broadband dual-band waveguide polarizer*
- Robin Jeanty (簡羅斌): *beam-forming array for 5G applications*
- Hsiu-Ping Liao (廖修平): *mmW antenna/array on package*

Current M.S. students

- Yen-Ting Lin (林彥廷): *polarization-reconfigurable antenna array*
- Je-Ruei Bai (白哲睿): *polarimetric radar and moving target identification*
- Rue-Fu Xu (許瑞福): *circularly-polarized multi-ferroic antenna (cooperation with* *Prof. Rob Candler* of UCLA)
- Bo-Kai Yang (楊博凱): *variable attenuator and radar system*

- Tzu-Yu Hsia (*夏紫瑀*): RFSoC
- *Chin-Lung Liao (廖金隆): MIMO antenna system*
- *Hsin-Ju Chen (陳心如): polarization-reconfigurable antennas on package*
- *Yi-Lin Lee (李奕霖): beam-steerable transmitarray*

Visiting Professor

- [2016/11-2017/6] Prof. Rob Candler, UCLA

Past Ph.D. students

- [2011/1] *Ju-Hung Chen (陳如弘)*: HP

  Design of Leakage Suppressed Conductor-Backed Coplanar Waveguide and Its Antenna Applications

- [2012/6] *Yen-Sheng Chen (陳晏笙)*: NTUT

  Application of Design of Experiments and Evolutionary Algorithms to Self-Structuring Electromagnetic Scatterer and Optimization of Antenna Structures

- [2013/6] *Shih-Chia Chiu (邱詩家)*: MTK

  Dual-Band and Frequency-Agile, Compact Composite Right/Left-Handed Transmission Line Antennas Using Novel Termination Circuits

- [2013/6] *Chien-Pai Lai (賴建伯)*: HP

  Miniaturization and Impedance Matching of Coplanar Waveguide-fed Slot Antennas

- [2015/6] *Liang-Yu Ou Yang (歐陽良昱)*: NCSIST

  A Planar and Subwavelength Open Guided Wave Structure Based on Spoof Surface Plasmons

- [2015/8] *Wan-Ting Hung (洪琬婷)*: NCSIST

  Circularly-Polarized Beam-Steering Reflectarray

- *Chun-Chih Liu (劉峻志)*: HP

An Efficient Design Methodology of Dual-Band Reflectarray with Single Linear Polarization Based on Resonator Models and Grouping Technique

Past M.S. students

- [2008/6] Bing-Hsiao Wang (汪秉孝): Quanta

  Broadband Slot Array Fed by a Microstrip Line

- [2008/6] Yu-Lin Shih (施佑霖)

  60-GHz Sequentially-Rotated Circularly-Polarized Array Antennas

- [2009/7] Hsiao-Wei Wu (吳曉薇): HTC

  Broadband, Sequentially-Rotated Slot Array with Beam-Switching Capability

- [2009/7] Chun-Wei Tseng (曾俊維): Lenovo

  Miniaturized Slot Antenna with Frequency Tunability

- [2010/1] Tsung-Yen Ho (何宗諺)

  Analysis of Backscattered Field of RFID Tag Antennas and Its Application in Metal-Mount Tags

- [2010/6] Shin-Yui Chang (張馨予): WNC

Design of Microstrip Diplexer and Dual-Band Filter Using Quarter-Wavelength Stepped-Impedance Resonators

- *[2010/6] Siou-Yi Shen (沈修毅): MTK*

  Design of Frequency-Agile, Wearable Antenna Using High-Impedance Surface

- *[2011/6] Jui-Ching Hsu (徐睿擎)*

  Design of Miniaturized Embedded Antenna for Long Term Evolution

- *[2011/6] Min-Da Chiou (邱敏達)*

  Split-Ring Resonator Structure Electrically Small Antenna

- *[2011/6] Chiung-Hao Chiu (邱炯豪): Fusion @New Zealand*

  Design of Broadband, High Gain Microstrip Patch Antennas for Microwave Virus Sanitizer

- *[2011/8] Chiung-Hao Chiu (童俊超): MTK*

  Design and Applications of Broadband Slot Ring Antenna

- *[2012/6] Wei-Hsiang Chou (周瑋翔)*

  Applications of Optimization Techniques to Designs of Ultra-Wideband Planar Monopole Antennas

- *[2012/6] Ming-Hsien Cheng (鄭銘賢): Hon Hai*

  Design and Analysis of 2.4-GHz and 60-GHz Antennas on Package

- *[2012/6] Jen-Jung Tung (董人龍)*

  Dualband Reflectarray Using Frequency Selective Surface

- *[2013/6] Li-Yuan Fang (方俐媛): TSMC*

  Self-Structuring Electromagnetic Scatterer Using a Conductor-Backed Template

- *[2013/12] Jyun-Yuan Cheng (鄭鈞元): MTK*

  Design of Wideband, High-Gain Antennas on Package

- *[2014/6] Chin-Chia Chang (張晉嘉): Phison*

  Probe-Compensated Microwave Holographic Imaging

- [2014/6] Hsin-Jou Huang (黃心柔): NCSIST

  Miniaturized Loop Antennas with Frequency Agility

- [2014/12] Bingzhang Tsai (蔡秉璋): Garmin

  A Continuously Beam-Steerable Patch Array Using Variable Reactive Load

- [2015/6] Shih-An Yang (楊世安): ASUS

  Three Reconfigurable Slot Antennas Realized by Varactor Diodes

- [2016/1] Hui-Hsin Wu (吳蕙心): Phison

  Non-Foster Circuits Realized by Transistor Negative-Impedance Converters

- [2016/2] Yang Lu (呂暘): ASUS

  A Polarization- and Pattern-Reconfigurable Self-Adaptive Antenna System

- [2016/7] Tzu-Heng Cheng (程子恆): MTK

  Wireless Environmental Sensor System for Advanced Greenhouse Application

- [2016/7] Chien-Hao Chiu (邱健豪): military service

  Calculation of Radiation Efficiency in Characteristic Modes Analysis — Case Study of Chassis Antenna

- [2017/1] Robin Jeanty (簡羅斌): Ph.D. student in AAL

  An Enhanced Slot Loop Antenna using a Metasurface and Varactors

- [2017/7] Jen-Kuei Tsai (蔡仁貴): MTK

  Dual-Band Slot Antenna Arrays Based on Composite Right-/Left-Handed Transmission Lines

- [2017/7] Ping-Hsueh Wu (吳秉學): AOI

  Design of Beam-Steerable Dual-Beam Reflectarray

HONORS & AWARDS

Designs of Two Miniaturized
UHF RFID Tag Antennas
Based on Shorted Patch and
Split-Ring-Resonator-Loaded Short Dipole
程子恆

- Identified as one of the student paper finalist in the 2009 IEEE Radio and Wireless Symposium. (Shih-Chia Chiu, Shih-Yuan Chen, and Powen Hsu, “Miniaturized Composite Right/Left-Handed Coplanar Waveguide Antenna for Dual-Band Operation”)
- 1st Prize in the 2012 IEEE Antennas and Propagation Society (AP-S) Student Design Contest. The winning entry is entitled “Rattlesnake Antenna System” by Shih-An Yang, Chin-Chia Chang, Bingzhang Tsai, and Li-Yuan Fang
- 本團隊所開發之天線模組教材獲選為102年度 教育部 資訊及科技教育司 網路通訊人才培育先導型計畫 優良教材獎 優等。
- 碩士畢業生張晉嘉榮獲中國電機工程學會103年青年論文獎第三名。
- 博士畢業生歐陽良昱榮獲電信所103學年度最佳博士學位論文獎。
- 指導專題生程子恆、江承軒參加2014 年臺大電機系大學部精專獎，榮獲首獎。作品名稱：Designs of Two Miniaturized UHF RFID Tag Antennas Based on Shorted Patch and Split-Ring-Resonator-Loaded Short Dipole。
- 指導專題生簡翌、黃璿諭、逄錦人參加2015全國大專創意電磁實作競賽，榮獲第一名。作品名稱：電磁波極化之合成與視覺化。
- 指導專題生陳心如參加2016全國大專創意電磁實作競賽，榮獲第三名。作品名稱：布魯斯特角與消失的極化。
- Selected as an HONORABLE MENTION in the 2017 IEEE AP-S Student Paper Competition. (Jen-Kuei Tsai and Shih-Yuan Chen, “Dual-Band Broadside Slot Array with Corporate-Series-Feed Based on CRLH Microstrip Line”)
- 大學部專題生張耀均、戴敬倫、吳庭瑋、蕭智遠參加2017全國大專創意電磁實作競賽，榮獲現場設計組佳作。
- 碩士畢業生**蔡仁貴**榮獲中國電機工程學會106年青年論文獎第三名。

PUBLICATIONS

- Publication list
- *電磁科普文章：漫談電磁學發展與天線科技*
- *技術文章：訊號相關性調降不易 LTE MIMO 天線設計挑戰大*

ONLINE COURSES

- *台大科教中心探索講座演講：以電波之筆描繪無線未來*
- *工程數學 複變 (Complex analysis)*
- *天線原理與基本參數1/9 (共9段)*
- *天線陣列理論1/6 (共6段)*

Last update 2017/9/6

Advertisements

California Residents In Heavy Credit Card Debt Are In For Big Surprise.

California Residents In Heavy Credit Card Debt Are In For Big Surprise.

About AAL

The Advanced Antenna Laboratory (AAL) has been focusing on the development of ***antennas and microwave circuits and systems****. Currently, we have 5 Ph.D. students and 8 M.S. students in our lab. In addition to research grants from the MOST (科技部), we also have collaboration projects with ASUS (華碩), ASE (日月光), NCSIST (中科院), and ITRI (工研院). If you are interested in the fields of electromagnetics, antennas, and RF circuits and systems, please contact us.*

Photo by Dr. I-Ting Chiang

Contact Us

If you have any comments or questions about AAL or Dr. Shih-Yuan Chen, please fill in the following contact form.

Name (required)

Email (required)

Website

Comment (required)

SUBMIT »

CREATE A FREE WEBSITE OR BLOG AT WORDPRESS.COM.